

## NEW PUBLICATIONS.

NAPOLÉON III. IN ITALY, AND OTHER POEMS. By ELIZABETH BARRETT BROWNING. 12mo. pp. 72. G. H. Fisher & Co.

The poetry of Mrs. Browning receives no improvement by seeking its inspiration in the excitement of politics. Indeed a large portion of this volume, which is chiefly devoted to panegyric on Louis Napoleon, differs from prose—and very bad prose too—in the style of its typography. None of her previous writings make such a profuse expenditure of obscure and inflated rhetoric, or exhibit so little of the earnest tenderness of feeling, and the sweet felicities of phrase, which characterize the nobler productions of her genius. Much must be forgiven to intensity of conviction and emotion, in view of events which take their coloring from the imagination of the poet, rather than from the sagacity of a cool observer; but she has here run riot in the indulgence of artistic lawlessness, in a manner which must tempt the patience of her sincerest admirers, while it furnishes a source of triumph to those who make her racy originality an occasion of disparagement. What earthly or heavenly motive can be found for clothing in the semblance of verse such dreary prosaic platitudes as the following, which need only to be shorn of capital letters to lose every trace of poetical construction?

The thinkers stood aside to let the nation act. Some hated the new-constituted fact of empire, as pride treading on their pride. Some quailed, lest what was poisonous in the past should graft itself in that Druidic bough on this green now. Some cursed, because at last the open heavens to which they had looked in vain for many a golden fall of marvellous rain were closed in brass; and some were silent, doubting all things for that popular conviction—evermore Emperor.

Or these:  
He will not swaggar nor boast of his country's needs, in a tone misgiving a great man most such should speak of his own; nor will he act, on her side, from motives baser, indeed, than a man of a noble pride can avow for himself as need; never, for laurels, or laurels, or custom, though such should be ripe, adapting the smaller morals to measure the larger life. He, though the merchants persuade, and the soldiers are eager for strife, finds not his country in quarrels only to find her in trade—while still he accords her such honors as never to flinch for her sake when men put service upon her, found heavy to undertake and scarcely like to be paid; believing a nation may act unselfishly—shiver a lance (as the least of her sons may, in fact), and not for a cause of finance.

The following is certainly in a higher strain, with a touch of the author's accustomed vigor:

But Italy, my Italy,  
Can it live, this gleam?  
Can she last and be strong,  
Or is it another dream  
Like the rest we have dreamed so long?  
And shall it, must it, be so,  
That after the battle-cloud has broken  
She will die off again  
Like the rain,  
Or like a poet's song  
Sung of her, said at the end  
Because her name is Italy—  
Die and count no friend?  
It is true—may it be spoken,  
That she who has lain so still,  
With a wound in her breast,  
And a flower in her hand,  
And a grave-stone under her head,  
While every nation at will  
Beside her has dared to stand  
And flout her with pity and scorn,  
Saying, "She is at rest,  
She is fair, she is dead,  
And leaving room in her stead  
To us who are later born,  
This is certainly best!"  
Saying, "Alas, she is fair,  
Very fair, but dead,  
And we have room for the race."  
—Can it be true, be true,  
That she lives now?  
That she rises up at the shout of her sons,  
At the trumpet of France,  
And lives now?—Is it true  
That she has not moved in a trance,  
As in Forty-eight?  
When her eyes were troubled with blood  
Till she knew not friend from foe,  
Till her hand was caught in a trait  
Of her element and baffled so  
From doing the deed she would;  
And her weak foot stumbled across  
The grave of a king,  
And down she dropt at heavy loss,  
And we gloomily covered her face and said,  
"We have dreamed the thing;  
She is not alive, but dead."

The rebuke, which Mrs. Browning has felt herself called upon to administer to this country, loses much of its ethical effect from the strange conceits, both of thought and expression, with which so many of its stanzas are clogged.

## A CURSE FOR A NATION.

## PROLOGUE.

I heard an angel speak last night,  
And he said, "Write!  
Write a Nation's curse for me,  
And send it over the Western Sea."  
I faltered, taking up the word:  
"Not so, my lord!  
If curses must be chosen another  
To send thy curse against my brother."  
"For I am bound by gratitude,  
By love and blood,  
To brothers of mine across the sea,  
Who stretch out kindly hands to me."  
"Therefore," the voice said, "shalt thou write  
My curse to-night.  
From the summits of love a curse is driven,  
As lightning is from the tops of Heaven."  
"Not so," I stammered. "Evermore  
My heart is sore  
For my own land's sake: for little feet  
Of children bleating along the street:  
For perked-up honors that galsay  
The best of ways;  
For smirking through a door that is  
Not open enough for two friends to kiss:  
For love of freedom which abates  
Beyond the Straits;  
For patriot virtue starved to vice on  
Self-praise, self-interest, and suspicion:  
For an oligarchic Parliament,  
And bribes well meant,  
What curse to another land assign,  
When heavy-souled for the sins of mine?"  
"Therefore," the voice said, "shalt thou write  
My curse to-night.  
Because thou hast strength to see and hate  
A foul thing done within thy gate."  
"Not so," I answered once again.  
"To curse, I choose men.  
For I, a woman, have only known  
The heart melts and the tears run down."  
"Therefore," the voice said, "shalt thou write  
My curse to-night.  
Some women weep and curse, I say,  
(And no one marvels), night and day.  
And thou shalt take their part to-night,  
Weep and write.  
A curse from the depths of womanhood  
Is very salt, and bitter, and good."  
So thus I wrote, and mourned indeed,  
What all may read.  
And thus, as was enjoined on me,  
I send it over the Western Sea.

## THE CURSE.

Because ye have broken your own chain  
With the strain  
Of brave men climbing a Nation's height,  
Yet have borne down your brand and thong  
On sons of others—for this wrong  
This is the curse. Write.  
Because yourselves are standing straight  
In the state  
Of Freedom's foremost avoyle,  
Yet keep calm footing all the time  
On writing-board-slaves—for this crime  
This is the curse. Write.  
Because ye prefer in God's name  
With a dash  
To honor in the Old World's sight,  
Yet do the deed's work perfectly  
In strangling martyrs—for this lie  
This is the curse. Write.  
Ye shall watch while kings conspire  
Round the people's smoldering fire,  
And, warm, for your part,  
Shall never dare—O shame  
To utter the thought into flame

Which burns at your heart.  
This is the curse. Write.

Ye shall watch while nations strive  
With the bloodhounds, die or survive,  
Drop faint from their jaws,  
Or throttle them backward to death,  
And only under your breath  
Shall favor the cause.  
This is the curse. Write.

Ye shall watch while strong men draw  
The nets of feudal law,  
To strangle the weak,  
And, counting the sin at a sin,  
You shall be sadder within  
Than the word ye shall speak.  
This is the curse. Write.

When good men are praying erect  
That Christ may avenge his elect  
And deliver the earth,  
The prayer in your ears, said low  
Shall sound like the tramp of a foe  
Shall drive you forth.  
This is the curse. Write.

When wise men give you their praise,  
They shall pause in the heat of the phrase,  
As if carried too far.  
When ye boast your own charters kept true,  
Ye shall blush; for the thing which ye do  
Derides the cause. Write.

When fools cast taunts at your gate,  
Your scorn ye shall somewhat abate  
For ye look o'er the wall,  
For your conscience, tradition and name  
Explored with a deadlier blame  
Than the worst of them all.  
This is the curse. Write.

Go, wherever ill-deeds shall be done,  
Go, plant your flag in the sun  
Beside the ill-doers!  
And recoil from clenching the curse  
Of God's witnessing Universe  
With a curse of yours. Write.

We seldom see a more striking specimen than is presented in the above frantic outcries of "the contortions of the Sibyl without her inspiration."

## BOOKS RECEIVED.

Say and Seal. By the Author of "Wide, Wide World," and the Author of "The Red Rover." 12mo. pp. 120. J. H. Lippincott & Co.  
Rita. An Autobiography. By Mrs. J. H. Lippincott. 12mo. pp. 255. Mayhew & Baker.  
The Florence Stories. By Jacob Abbott. Grinnell. 12mo. pp. 252. Appleton & Co.  
Marion's Sundays. By Miss Kitty Nelly. 12mo. pp. 191. Robert Carter & Brothers.  
Stories of the Ocean. By the Rev. John Spaulding. 12mo. pp. 177. The same.  
The Tell Tale. 12mo. pp. 82. The same.  
Walter Ashwood. A Love Story. By Paul Sigvald. 12mo. pp. 236. Rudd & Carter.  
How to Cultivate and Preserve Celery. By Theophilus Ross. Edited with a Preface. By Henry S. Olcott. 8vo. pp. 102. C. M. Saxton, Barker & Co.  
Napoleon III. In Italy and Other Poems. By Elizabeth Barrett Browning. 12mo. pp. 72. G. H. Fisher & Co.  
A Voyage Down the Amazon. By Henry McDougall Corbett. 12mo. pp. 226. D. Appleton & Co.  
The African Slave Trade. By the Rev. Rufus W. Clark. 12mo. pp. 172. American Tract Society.  
County House and Household. By Mrs. Mary J. Holmes. 12mo. pp. 204. C. M. Saxton, Barker & Co.  
Frisland and the Arctic Circle. By the Author of "The Heart of Redcliffe." 12mo. pp. 251. D. Appleton & Co.  
Life of Stephen A. Douglas. By a Member of the Western Bar. 12mo. pp. 157. Derby & Jackson.

## LITERARY.

—Dr. Charles Mackay is engaged in a work that will be interesting to all lovers of poetry. It is a complete collection of "The Jacobite Minstrelsy of Scotland," and will be issued by Messrs. Griffin & Co. of London and Glasgow. The Ettrick Shepherd's "Jacobite Relics of Scotland" has grown to be among the acme of modern books, though published in 1819-21, and \$30 was lately paid in this city for a copy of the two volumes, 8vo., so that the field is open for a classical book on these genuine outpourings of loyalty and nationality, which are free from the anarchy of modern "literary cookery," that seems gathering around the older ballad favorites of the Scottish Muse.

—Prof. H. B. Smith, of the Union Theological Seminary, whose "Tables of Ecclesiastical History" have met with so favorable a reception, has ready for publication a "Memoir of the late Anson G. Phelps, esq.," of New-York, whose career of usefulness and Christian benevolence was brought to a close by his premature death at an early age. It is embellished by a fine steel portrait, and is to be published by C. Scribner.

—Prof. Brugsch of Berlin has just brought out the third portion of his work on the "Geographical Inscriptions on Ancient Egyptian Monuments," collected during a scientific exploration, under the patronage of the Prussian Government. In his peculiar line of study, "The Hieroglyphic or Demotic Paleography of Egypt," Prof. Brugsch is equally eminent with Lepsius, or Champollion, who has cultivated more expressly the hieroglyphic, or sacred character and dialect.

—William Howitt's new novel "The Man of the People," though meeting with success in England is probably too local in its character to be reprinted. It describes the career of a young man of liberal tendencies, in the dark days of Castlereagh and Sidmouth, and introduces freely on the scene the political celebrities of George the Fourth's reign; the hero is saved from a somewhat tragical end by his sudden accession to fortune and station after the orthodox manner so frequent in novels and so rare in real life.

—The rumors respecting Mr. Thackeray's engagement on a historical work connected with the Angles of Queen Anne, gather force and consistency from their agreement with his favorite line of study, and the desire he expressed when in this country to produce a standard work of this character, if ever he should be removed from the necessity of supplying the inevitable demands of the periodical press. There is no chance that so practiced a writer will challenge competition by a direct continuation of a work like Macaulay's History, and the book will unquestionably appear in an independent shape.

—Two centuries are at work to render the present Spring season little memorable as a publishing era. In America the political agitation consequent on the approaching Presidential election is so absorbing that prudent publishers reserve their enterprise for a time when the still voice of Literature has a better chance to be heard; and in England the impending abolition of paper duty in July next naturally postpones all large undertakings to that period; so that, beyond the current supply of fiction and light literature for daily use, the presses of both countries are nearly inactive.

—Among the books to be expected from abroad, are "A History of the Game of Chess, from the Earliest Period to the Present Time," by Duncan Forbes, esq., a distinguished Oriental scholar, who is expected to write much light—from Eastern sources—on the vexed questions connected with the origin and antiquities of the game; a new "Grammar of the Chinese Language in English," by M. Leon de Ransy; and a work on American Antiquities, "Antiquarian and Ethnological Researches in New-Granada, Ecuador, Peru and Chili," by Wm. Bollaert, esq., the latter to be published by Messrs. T. Ulmer & Co.

—Admirers of Swedenborg will learn with pleasure that Mr. Eliza Rich, a gentleman known for his researches in mystical lore, and author of a book on "The Occult Sciences," has just completed a classified analysis, and arrangement in the order of instruction, of the great work of the Swedish Seer, the *Arcana Cælestia*. It will form two bulky volumes of 1,400 closely printed pages, and has been executed as a labor of love in moments snatched from pressing daily avocations.

—Messrs. Derby and Jackson announce among other novelties, a volume from the French philosopher Descartes, with an editorial preface; the editor's name is not mentioned, but may be guessed at—Mr. O. W. Wright, the translator of Cousin, and author of a "Cyclopedia of Philosophy," destined to see the light on the coming of that milder day, when political agitation has quieted down—and a translation of Alfred de Maury's work, *La Terreur et l'Homme*—a title similar to that of Professor Guyot's popular book, but taking a wider range over linguistic and ethnological science, and executed with the peculiar neatness and elegance which characterize French scientific résumés.

—The Spring book trade sales have passed over at Philadelphia and New-York, with little excitement or

even attention from the regular trade. Though the quantities of books sold have been up to the average, they have, in a large proportion, been dispersed among dealers of comparatively little growth—as the "gift bookellers" and itinerant book auctioneers of the South and West, buyers from Canada and the British Provinces, &c. The largest single line of the New York sale (and which, indeed, is said to be the highest ever known) was 10,000 volumes of Mrs. Caroline Lee Hentz's novels, purchased in one lot, at 48 cents per volume, by Mr. G. G. Evans, the pioneer gift bookeller of Philadelphia. At both sales stereotyped plates proved to be a drug, and the larger portion of those offered was withdrawn unsold.

—Prof. Owen's long-expected work on fossil remains, "Paleontology; or, A Systematic Summary of Extinct Animals, and their Geological Relations," has been published by Messrs. Black of Edinburgh. As a manual of the existing state of knowledge, it is pronounced invaluable by scientific men, though it studiously avoids an opinion on the theoretical questions now provoking discussion. Prof. Owen is still engaged on a work of magnitude, an edition and notes of "The Posthumous Papers of John Hunter, on Natural History, Physiology, Generation, Psychology, Paleontology, and Comparative Anatomy," embracing, it is to be hoped, all that was left of that great man's labors, after the dastardly destruction by Sir Everard Home of his papers, that he might seize in their borrowed plumes.

—To an elegant edition of Lord Macaulay's "Biographies," contributed to the *Encyclopædia Britannica*, Mr. Adam Black, his successor in Parliament, contributes an interesting introduction, comprising notes of his connection with Edinburgh and original extracts from his speeches and letters.

—The "Life and Times of George Villiers, Duke of Buckingham," from original and authentic sources, is publishing by Messrs. Hurst and Blackett, from the pen of Mrs. Thomson, a lady whose contributions to English Literature as the "Lives of the Jacobites," "Sir Walter Raleigh," "The Duchess of Marlborough," &c., were formerly more frequent than of late. Any new material toward a correct judgment of the man whom Dryden describes as "not one, but Nature's whole epitome," will be a literary treasure.

—That never-ending theme of discussion—the authorship of "Junius"—will receive a revival from the forthcoming "Life of Sir Philip Francis," announced by Mr. Parker. It will include much curious correspondence of Sir Philip's and of his Father, the Doctor, whose translation of "Horace" was more famous in the last century than at present, and cannot fail in some way or other to throw light on the question lately stirred to a fresh excitement by the tantalizing half disclosures revealed to Mr. Bohn.

—The fourth number of the "Cornhill Magazine" will appear distinguished above its fellows by an illustration by Sir Edwin Landseer. It will also contain a posthumous fragment by the author of "Jane Eyre," and an article by Albert Smith. The circulation attained in the United States by this Magazine—in spite of difficulties and delays—is so great that there is a plan now seriously entertained by an enterprising bookseller of reprinting each number bodily, and issuing here the next day after the arrival of the English copies.

—Mr. Bentley, in bringing out simultaneously (as a 6d.) of Miss Warner's new story, "Say and Seal," announces that the circulation of the "Wide, Wide World" reached half a million.

—Two names new to literature, are announced as authors of a happily entitled book, "The Queens of Society," Grace and Philip Wharton—whether brother and sister, or husband and wife, is yet unrevealed. The work will contain Memoirs of Lady Wortley Montague, the famous Duchess of Devonshire, Madame de Staël, Lady Caroline Lamb, Lady Morgan, and other female celebrities, to whom the title is appropriate. It forms two elegantly illustrated volumes, and will unquestionably command the speedy attention of our readers.

—"The Sea and its Living Wonders," a beautifully illustrated volume, translated from the German of Dr. Hartwig, is announced by Messrs. Longman, under the editorship of Mr. Noel Humphrey, the popular writer on Aquaria and Marine Zoology.

## ARMY AND NAVY INTELLIGENCE.

The latest advice from Lieut. Mullan's wagon-road expedition state that it was in winter quarters. The road is completed about 300 miles from Fort Walla-Walla, and is to be finished to Fort Bente by next fall. The men were all living in tents, the weather being very cold and disagreeable, with plenty of snow on the ground. The commanding officer of the Department of the West has been instructed to cause a detachment of mounted troops to be detailed for service with the expedition engaged in exploring the head waters of the Yellow Stone and Missouri Rivers. The detachment of troops under the command of Capt. Barton, at Harper's Ferry, has been ordered to Fort Columbus. A detachment of recruits left Jefferson Barracks on the 23d of March, en route for Fort Riley, Kansas. Brig.-Gen. A. S. Johnston gave up the command of Utah to Col. Smith of the 11th Infantry on the 25th of February. Maj. Francis N. Page, Adjutant General of the U. S. Army, died at Fort Smith, Arkansas, on the 25th of March.

A destructive fire broke out on the morning of the 27th of March, destroying one of the finest buildings in the Pensacola Navy-Yard. The fire was caused by a burning wad from the morning gun. The loss is estimated at about \$100,000. There are about 300 men employed in the Pensacola Navy-Yard at present, and there are over 100 marines in the barracks. The United States vessels now lying at the Yard are as follows: Steamers, Seminole, Crusader and Watch Wicket, fitting out for sea. The Fulton, recently wrecked off Santa Rosa Island, has been docked, and will be rebuilt at that place. The Wyandotte, Walker, and Vixen lie out in the stream; the latter is surveying the Harbor of Pensacola. The United States steam frigate Roanoke, Flag Officer McClung, Commanding the Home Squadron; the United States ship Sabine, and store-ship Relief, were at Aspinwall on the 23d of March.

NARCOTIC INJECTIONS IN NEURALGIA.—The *Medical Times and Gazette*, referring to cases of neuralgia in which the local treatment by narcotic injection into the parts was employed, enumerates as follows what appears to be the advantages of that method: That much less constitutional nervous-irritation attends the introduction of the narcotic than when it is given by the stomach; that the action of the narcotic is more immediately produced; that the action of the narcotic appears more sure when injected—the exact amount taken into circulation can be more readily seen, and the risk of contamination or alteration which it is exposed to, given by the stomach, is avoided; and it appears to exert more benefit on the local affection when it has to be absorbed from the part affected itself, probably from being brought more directly into contact with the nerves involved in the disease. On the other hand there are the disadvantages. These are chiefly—the pain occasioned by the introduction of the fine cannula; the chance of the fluid escaping from the wound or puncture; and the production of local inflammation, effusion of blood, &c.

FIRST ARRIVAL OF BOATS AT ST. PAUL.—A Minnesota paper says:

"The Milwaukee arrived at St. Paul yesterday afternoon (25th). She worked her way through ice in Lake Pepin still a foot thick. This is the earliest arrival on record except that of 1858, when the Grey Eagle arrived at St. Paul on March 25, three days earlier than the present season. The other arrivals since 1854 have varied from March 31 to April 30, except in 1857, when the first boat did not reach the wharf until May 1. It is also reported that two other boats came in yesterday after the Milwaukee—the Ocean Wave and the Denmark. These early arrivals are much in our favor, and encourage immigrants."

## ON RIFLED CANNON...

The first attempt at increasing the range and precision of ordnance by rifling the bore, and thereby giving the shot a rotation vertical to the line of propulsion, date from the 17th century. There is a small rifled gun at Munich, manufactured in Nuremberg in 1694; it has eight grooves and a bore of about two inches diameter. During the whole of the 18th century, experiments were made, both in Germany and in England, with rifled cannon, some of them breech-loading. Though the calibers were small, the results obtained were very satisfactory; the English two-pounders in 1776, at a range of 1,300 yards, gave a lateral deflection of two feet only—a degree of precision which no other gun at the time was capable of approaching. In the same year, these rifled cannon were for the first time used for projecting along shot.

These experiments, however, remained for a long while without any practical results. The current of military opinion at that time altogether went against rifled arms. The rifle itself was then a very clumsy instrument, its loading was a slow and tedious operation, requiring considerable skill. It was a weapon unfit for general warfare at a period when rapid firing, whether of deployed lines, of heads of columns, or of skirmishers, was one of the chief desiderata in battle. Napoleon would have no rifle in his army; in England and Germany, a few battalions were equipped with them; in America and Switzerland alone, the rifle remained the national weapon.

The Algerian war was the occasion to bring the rifle again into credit, and to cause improvements in its construction which were but the beginning of that colossal revolution in the whole system of firearms which is even now far from its conclusion. The smooth-bore muskets of the French were no match for the long *épingardes* of the Arabs; their greater length and better material, which a limited use of a heavier caliber, enabled the Kabyles and Bedouins to fire on the French at distances where the regulation musket was utterly powerless. The Duke of Orleans, having seen and admired the Prussian and Austrian chasseurs, organized the French chasseurs on their model, who soon, for armament, equipment, and tactics, became the first troops of their class in the world. The rifle with which they were armed was far superior to the old rifle, and it soon underwent further changes, resulting, finally, in the general introduction of rifled muskets in the whole of the infantry of Europe.

The range of infantry fire having thus been increased from 300 to 800, and even 1,000 yards, the question arose whether field-artillery, which hitherto had commanded all distances from 300 up to 1,500 yards, would still be able to hold its own against the new small-arms. The fact was, that the greatest efficacy of common field-guns lay just within that range which was now disputed to it by the rifle; canister was scarcely effective beyond 600 or 700 yards; round shot gave no very satisfactory results, with the six or nine-pounder, beyond 1,000 yards; and abraded (spherical case-shot), to be very formidable, required a coolness and a correct estimation of distances which are not always to be found on the field of battle, when the enemy is advancing; while the shell-practice of the old bowitzers against troops was anything but satisfactory. The armies which had the nine-pounder gun for their smallest caliber, such as the English, were still the best off; the French eight-pounder, and, still more, the German six-pounder, became almost useless. To obviate this, the French introduced, about the beginning of the Crimean war, Louis Napoleon's so-called invention, the light twelve-pounder, canon obusier, from which solid shot, with a charge of one-fourth instead of one-third its weight, as well as shell, was to be fired. This gun was a mere plagiarism upon the English light twelve-pounder, which had already been again abandoned by the English; the system of firing shells from long guns had been long in practice in Germany; so that there was nothing at all new in this pretended improvement. Still, the arming of the whole French artillery with 12-pounders, even of a diminished range, would have given it a decided superiority over the old 6 and 8-pounders; and to counteract this, the Prussian Government, in 1859, resolved upon giving heavy 12-pounders to all its foot batteries.

This was the last move in the cause of the smooth-bore gun; it showed that the whole subject was exhausted, and the defenders of the smooth-bore driven *ad absurdum*. There could, indeed, not be anything more absurd than to arm the whole artillery of an army with those lumbering, stick-in-the-mud Prussian 12-pounders, and that at a time when mobility and rapidity of maneuvering is the greatest desideratum of all. The French light 12-pounder having a relative superiority only to other artillery, and none at all as regarded the new small arms, and the Prussian heavy 12-pounder being a palpable absurdity, there remained nothing but either to drop field artillery altogether, or to adopt rifled cannon.

In the mean time, experiments with rifled cannon had continually been carried on in various countries. In Germany, the Bavarian Lieut.-Col. Reichensbach experimented with a small rifled gun and cylinder-conoidal shot, as early as 1816. The results were very satisfactory as to range and precision, but the difficulties of loading and extraneous obstacles prevented the subject from being followed up. In 1846, the Piedmontese Major Cavalli constructed a breech-loading rifled gun which attracted considerable attention. His first gun was a thirty-pounder, charged with a cylinder-conoidal hollow shot weighing 64 pounds, and 5 pounds powder; at 144 degrees elevation he obtained a range (of first gauge) of 3,050 metres or 3,400 yards. His experiments (continued up to the latest period, partly in Sweden, partly in Piedmont) had the important result of leading to the discovery of the regular lateral deflection of all shot fired from rifled ordnance, which is caused by the pitch of the grooves, and which is always in the direction to which the grooves turn; this once being ascertained, its correction by what is called lateral or horizontal tangent-scale, was also invented by Cavalli. The results of his experiments were highly satisfactory. At Turin, in 1854, his thirty-pounder, with 8-pound charge, 64-pound shot, gave the following results:

Elevation.	Range.	Lateral irregular deflection.
15°	2,860 metres	2.81 metres
15°	3,785 metres	3.31 metres
20°	4,511 metres	3.72 metres
25°	5,103 metres	4.77 metres

giving a range, at 25 degrees, of above three miles, with a lateral deflection from the line of aim (as corrected by the horizontal tangent scale) of less than 16 feet! The largest French field howitzer, at a range of 2,400 metres, equal to 2,650 yards, gave lateral deflections averaging 47 metres, or 155 feet; ten times as large as those of the rifled gun at twice the range.

Another system of rifled ordnance which created attention, a little after Cavalli's first experiments,

was that of the Swedish Baron Wahrendorff. His gun was also breech-loading, and his shot cylinder-conoidal. The difference, however, in the shot was this: while Cavalli's shot was of hard metal, and had wings to fit in the grooves, Wahrendorff's shot was covered with a thin layer of lead, and slightly larger in diameter than the bore of the rifled portion of the gun. After being introduced into the chamber, which was large enough to receive it, the shot was propelled by the explosion into the rifled bore, and the lead being pressed into the grooves effectually, did away with all windage, and prevented the escape of any portion of the gases formed by the explosion. The results obtained with these guns in Sweden and elsewhere were quite satisfactory, and if Cavalli's guns were introduced into the armament of Genoa, those of Wahrendorff figure in the casemates of Wexholm in Sweden, Portsmouth in England, and in some Prussian fortresses. Thus, the introduction of rifled ordnance into practical use had begun, although only for fortresses. There remained only the one step to introduce them into field artillery, and this has been done in France and is now being done in all European armies. The various systems on which the rifling of field ordnance is now, or may be, profitably carried on, will form the subject of a second paper.

## THE WASHOE SILVER MINES.

The discovery of rich Silver Mines in the extreme western portion of Utah, within two hundred miles of Sacramento, is attracting much attention on the western side of the continent, and is looked to with no little interest by multitudes in this portion of the country. The gold mines of California, wonderfully productive as they have proved, have always been regarded by many as uncertain sources of permanent property; and a serious want has been felt in that region of natural industrial resources, that should sustain the commercial property of the State, when its gold mines, after the usual manner of all other gold mines, had become comparatively unimportant. It has also been a serious want of the Californians to provide some medium to secure direct trade with their opposite neighbors of China and the East Indies, whose teas, silks, spices, &c., now largely imported into San Francisco, are paid for at serious cost for exchange with the "white money" bought up in England with the gold sent eastward from California. Both these wants promise to be supplied by the discovery of the Washoe Silver Mines; and a new and powerful impetus to immigration is already experienced there, the effect of which will be to fill with an industrious population this heretofore wild portion of Utah Territory; and, the locality being on one of the established routes between San Francisco and Missouri, new facilities of intercourse will thus be afforded between the eastern and western portions of the continent. To California and the Eastern States, these discoveries are therefore of much greater importance than if they had been made in territory upon the Gila, the outlet of which would be the Gulf of California, or in regions far to the north, the products of which would seek the sea by the river.

The new silver mines are on the eastern slopes of the Sierra Nevada, the "snowy range," which follows the line of the western coast, as the Appalachian chain does that of the eastern, its crest-line passing within about 100 miles of Sacramento, and in its lowest passes attaining an elevation of over 7,000 feet above the level of the sea, or nearly four times the general height of the Alleghanies. From Sacramento, which is reached by steamer from San Francisco, one passes by railroad up the valley of the American River to Folsom; thence west by stage to Placerville, which is 1,755 feet above the sea-level, and there, taking horses or mules, begins the ascent of the mountains by the road through Johnson's Pass, which is the route followed by the emigrants. The summit being passed, the road follows the course of Carson River, a stream which, flowing down the eastern side of the mountains, trends northward for about 50 miles, and then, turning toward the east, flows as much further in this direction, till it is lost in Carson Lake. This is one of the numerous lakes, without outlets, ranged along the eastern side of the mountains, which serve as the reservoirs for containing the drainage of this portion of the country, and returning it by evaporation to the surface of the hills. Along the valley of Carson River, in its northern course, are numerous mining camps and diggings, at which gold has been obtained to some extent; and where the river bends toward the east are found the veins which have proved so productive in silver. These lie along the eastern side of one of the spurs of the main range, to which spur the name of Silver Range has been applied. Here are already commenced a group of villages, there designated cities, and known as Carson City, Virginia City, Silver City, Johnston, &c. Genoa is a settlement further up the valley, and near the foot of the mountain pass. It is fourteen miles from Carson City, and this is seventeen miles from Virginia City. Between the two last named places, a stage now regularly runs for conveying passengers. This is certainly extraordinary progress for localities which, when last uncovered of snow, possessed little interest beyond the other wild territory around. Beside the discoveries at this point, silver, commonly associated with lead ores, and gold, also, is found at numerous points along the range of the eastern slopes, from Honey Lake on the north-west to Mono Lake on the south-east, points about 200 miles apart. The precious metals have also been found 150 miles east of Carson City, and it is said that the indications are favorable that a large portion of the territory thus included is likely to prove auriferous and argentiferous. The gold met with is reported to contain so much silver that it is valued at only about \$3 per ounce, or less than two-thirds the worth of the gold found on the other side of the Sierra Nevada. If the reports brought from the mines are correct, there would appear to be native alloys of silver and gold in which the silver is the prevailing metal.

The accounts, however, as to the character of the metallic products are as yet quite vague, so that one can gather from them little more than the general statement of silver being procured in such abundance as to give immense value to a few feet in length along the line of the veins, and to justify expectations of extraordinary additions during the year to the silver product of the world. Though no correct description of the veins or of their products is to be found among the numerous published statements which have appeared in the journals received from San Francisco, we infer that the chief ores are, like many of the Mexican silver ore, highly argentiferous galenas, the working of which will involve more skill and knowledge of metallurgy than can immediately be brought to bear to produce the extraordinary results anticipated. The native silver associated with these may possibly be found in some points upon the lines to yield large and profitable returns at an early day; and if found, as in

some of the rich mines of Peru and Mexico, these will be justified in their purchases who have paid hundreds of dollars per foot length of vein. Such, such mines, on permanent deep veins, are not of the character, like the deposit gold mines, to afford independent employment to the thousands that will rack recklessly into the region. The journals already speak of the tunnels (adits) commenced for reaching the vein at low depths below their outcrop on the surface of the hills. This is a slow and tedious process, and usually the first step in laying out work for underground mining. These adits must be completed and shafts must be sunk to connect with them before the ores can be extracted in large quantities. The history of the most productive Lake Superior mines indicates how slow and expensive is this operation of "opening a mine." And when at last the ores are raised in quantity to the surface, what are the facilities in Utah for their reduction? Rich ores, it is true, that assay several thousand dollars to the ton, will bear the expense of transportation required to place them in smelting-works, that may soon be established for the purpose in San Francisco, or even in those now in operation in Europe; but in the usual experience of mining, such ores are the exceptions, specimens only, while the main dependence of the mine is upon the poorer class of ores. We are not, however, disposed to compare these with the silver mines of the Harz and Bohemia, which for centuries have grudgingly yielded their poor returns to the patient toil of the German miner and the skillful, saving device of his brother smelter; but are willing to anticipate results more in accordance with the fast ways of American enterprise, and not to disregard the enormous returns of silver that have occasionally rewarded the labor of the miner of Potosi and Guanajuato.

The Washoe region is a great field for mining enterprise, the capacity and importance of which is not likely to be developed in one year, nor, if anywhere else than within reach of California, hardly in the present century. Beside silver, gold and lead, copper also is met with, and other metals will surely be found with them, as occurs in all other metalliferous regions of this character. It is reasonable to expect the occurrence of cobalt, nickel, zinc, platinum, and if tin were anywhere worked between the Arctic regions and the Caribbean Sea, of this metal also, of which we are singularly deficient in North America, south of Greenland. Thus are here found, more than anywhere else in the United States, the elements for the foundation of permanent mining establishments, upon a scale commensurate with those of Cornwall and of Ekaterinburg, which have resulted from the slow growth of centuries. As to the capacity of the country for supporting a large population, some doubts may be entertained. From November to April the ground is covered with snow; the cold of the Winter is intense, but the climate is said to be healthy, and the weather in Summer never disagreeably hot. Throughout the valleys are fine ranges for cattle, and excellent grazing lands are found on the untimbered slopes of the mountains, and in some of the valleys between them. The soil of much of Carson Valley is fertile and facile, but there is little or no rain here in Summer, and irrigation is found indispensable. In the upper portion of the valley, this is very easily secured; the foot hills of the Sierra surrounding that portion in a semi-circle, and sending down innumerable leaping, sparkling brooks, which run but little below the average surface of the ground they traverse, and are readily turned aside and made to subserve the needs of the farmer. Lower down, when these streams have been blended into Carson River, large tracts of perfectly level, fertile plain adjoin it, covered only by the desert shrubs known as Sagebrush and Greasewood, and needing but irrigation and culture to render them abundantly productive. We noticed in passing two separate places where sufficient dams (for which timber may easily be floated down from the mountains during the Spring freshets) may be built at a moderate cost, where each will irrigate and render fruitful at least a hundred square miles of what would thus be rendered a garden, where vegetables would command any price that a man's conscience would allow him to ask for them. Lands for farming purposes have been taken up everywhere near the mines, and their agricultural capacity will be well tried the approaching Summer. At Carson City, which promises to be the central point in importance of the region, it is said that "water from mountain springs and from artesian wells, and wood in abundance, can be had, sufficient for the wants of a large population." The country is occupied without law, and its location should bring it under the Mormon jurisdiction, to which probably the occupants would not submit. An application is to be made to Congress the present session to set it off as a distinct Territory, called Nevada. In its present condition, it holds out no inducements to the prudent and cautious to migrate to it. For a time, it will be overrun by reckless adventurers, and then hardy pioneers will settle upon its lands and prepare them for the permanent mining enterprises which will succeed the dashing operations of the original